TPMC/PORTS-96

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Theta Pro2Serve Management Company, LLC

Environmental Management & Enrichment Facilities

Preliminary Hazard Analysis Report for the Decontamination and Decommissioning Project at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Portsmouth / Paducah Project Office

PPPO

This document is approved for public release per review by:

Henry Thomas 9/26/2006

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Managed by
Theta Pro2Serve Management Company, LLC
for the Portsmouth/Paducah Project Office
of the United States Department of Energy

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Preliminary Hazard Analysis Report for the Decontamination and Decommissioning Project at the Portsmouth Gaseous Diffusion Plant Piketon, Ohio

Date Issued – September 2006

Prepared for the
U.S. Department of Energy
Portsmouth/Paducah Project Office

THETA PRO2SERVE MANAGEMENT COMPANY, LLC
managing the Infrastructure Activities at the
Portsmouth Gaseous Diffusion Plant
under contract DE-AC24-05OH20193
for the
U.S. DEPARTMENT OF ENERGY

CONTENTS

ACRONYMS

AA	Accident Analysis
ACP	American Centrifuge Plant
BJC	Bechtel Jacobs Company LLC
CD	Critical Decision
CFR	Code of Federal Regulations
CSDR	Conceptual Safety Design Report
D&D	Decontamination and Decommissioning
DMSA	DOE Material Storage Area
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
DUF_6	Depleted Uranium Hexafluoride
EMWMF	Environmental Management Waste Management Facility
ETTP	East Tennessee Technology Park
GCEP	Gas Centrifuge Enrichment Plant
GDP	Gaseous Diffusion Plant
HA	Hazard Analysis
HAD	Hazard Analysis Document
HASP	Health and Safety Plan
IWS	Inactive Waste Site
N/A	Not applicable
O	DOE-Order
OI	Other Industrial
OSWDF	On-Site Waste Disposal Facility
PCB	Polychlorinated Biphenyls
PHA	Preliminary Hazard Analysis
PHAD	Preliminary Hazard Analysis Document
PHS	Preliminary Hazard Screeing
PORTS	Portsmouth Gaseous Diffusion Plant
PPPO	Portsmouth/Paducah Project Office
RQ	Reportable Quantity
SAD	Safety Analysis Document
SAR	Safety Analysis Report
SI	Standard Industrial
SIH	Standard Industrial Hazard
SNM	Special Nuclear Materials
STD	DOE-Standard
TPMC	Theta Pro2Serve Management Company, Inc.
TQ	Threshold Quantity
UDS	Uranium Disposition Services, Inc.
USEC	United States Enrichment Corporation

1. INTRODUCTION

The U.S. Department of Energy (DOE) approved DOE Order (O) 413.3A, *Program and Project Management for the Acquisition of Capital Assets* (DOE 2006) on July 28, 2006. The Implementation section of the DOE O 413.3A indicates a future DOE-Standard (STD) (DOE-STD-1189) will provide implementation guidance for Hazard Category 1, 2, and 3 nuclear facilities safety requirements and that implementation of DOE O 413.3A for Hazard Category 1, 2, and 3 nuclear facilities is delayed until six months after issuance of the new standard. However, the DOE Portsmouth/Paducah Project Office (PPPO) at the Portsmouth Gaseous Diffusion Plant (PORTS) directed Theta Pro2Serve Management Company, LLC (TPMC) to prepare safety basis documentation for Critical Decision (CD)-1 consistent with the requirements of DOE O 413.3A for the decontamination and decommissioning (D&D) of the gaseous diffusion plant (GDP) facilities at PORTS. The requirements for CD-1 include: (1) prepare a Conceptual Safety Design Report (CSDR) for Hazard Category 1, 2, and 3 nuclear facilities, and (2) prepare a Preliminary Hazard Analysis (PHA) Report for facilities that are below Hazard Category 3 threshold as defined in Title 10 Code of Federal Regulations (CFR) 830, *Nuclear Safety Management* Subpart B, *Safety Basis Requirements* (CFR 2001), and obtain DOE approval (field level).

The PORTS D&D project utilized existing safety basis documentation to develop the safety basis documents required for the conceptual design phase of the project. The existing safety basis documents utilized were developed specifically for the PORTS GDP facilities and/or safety basis documentation from DOE Oak Ridge facilities that were developed for similar facilities and hazardous materials.

The purpose of this report is to serve as the PORTS D&D project PHA Report by documenting the approach utilized to meet the requirements for a PHA Report.

2. PHA REPORT

A CSDR (TPMC 2006) has been prepared for the PORTS D&D project which addresses four Hazard Category 2 or 3 facilities (i.e., X-326, X-330, X-333, and X-705) as required by DOE O 413.3A (DOE 2006a) and in accordance with 10 CFR 830, Subpart B. This section of the PHA Report describes how the requirements for a PHA report have been satisfied with existing documentation and serves as the PORTS D&D project PHA Report.

The DOE reservation at PORTS includes a total of 392 facilities, which 187 are buildings or aboveground structures. Of these, 72 facilities are former Gas Centrifuge Enrichment Plant (GCEP) facilities and are expected to be leased to the United States Enrichment Corporation (USEC) for the American Centrifuge Plant (ACP) and three facilities are leased to Uranium Disposition Services, LLC (UDS) for the depleted uranium hexafluoride (DUF_6) conversion project. The remaining 317 facilities, which 145 are buildings or aboveground structures, will constitute the PORTS D&D project. Figure 1 is an aerial photograph of PORTS looking towards the southwest. The large buildings at top-center in the background are the GCEP facilities that will be utilized for the USEC ACP. The three large gaseous diffusion buildings are in the foreground. The majority of the GDP facilities are currently leased from DOE by USEC. Both USEC and DOE have existing safety basis documentation for their respective facilities.

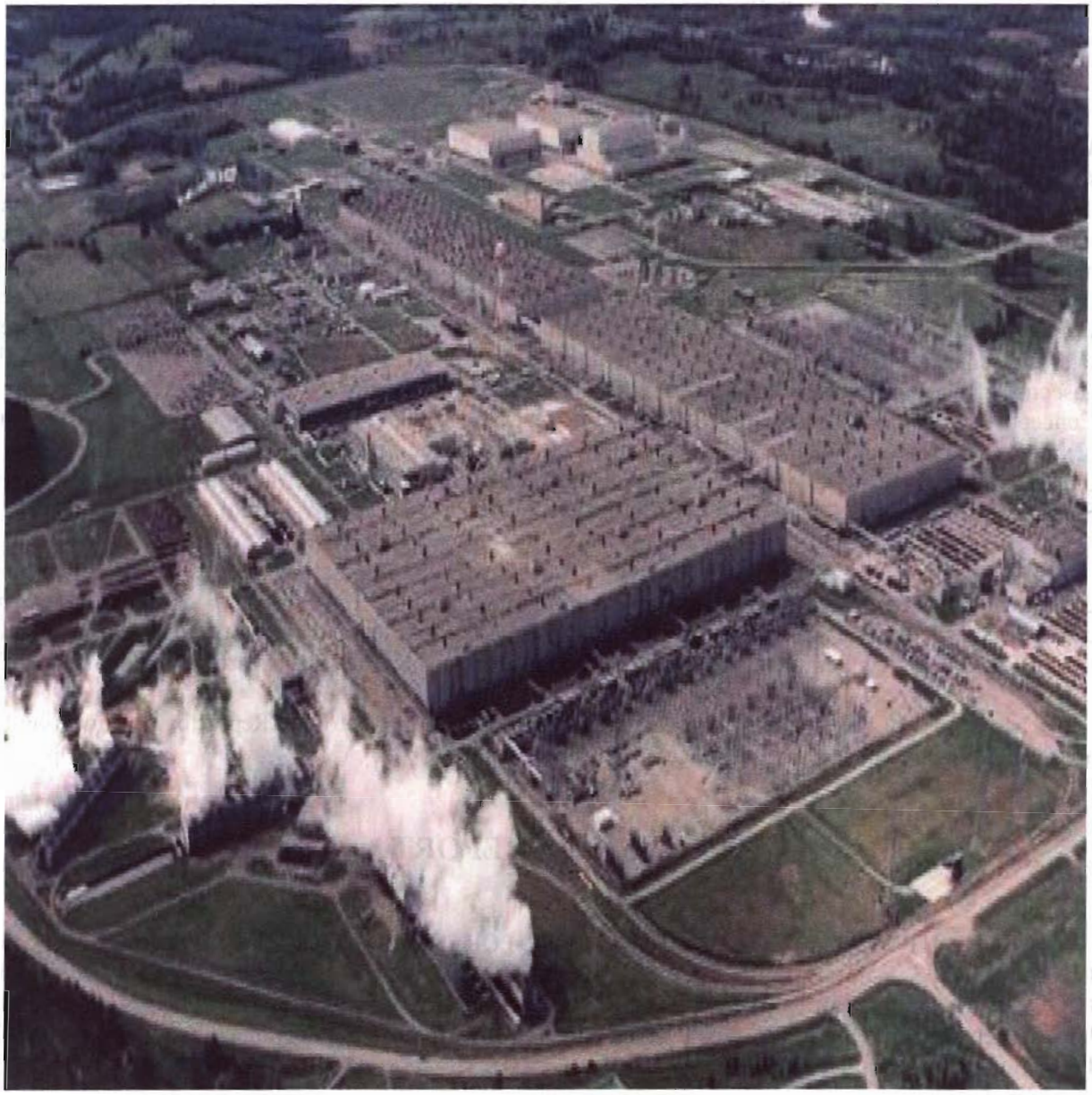

Fig. 1. Aerial view of PORTS looking southwest.

Title 10 CFR 830, Subpart B establishes safety basis requirements for Hazard Category 1, 2, and 3 DOE nuclear facilities. Title 10 CFR 830, Subpart B recognizes a graded approach to ensure that the level of analysis, documentation, and actions used to comply with requirements in Subpart B are commensurate with:

- The relative importance to safety, safeguards, and security;
- The magnitude of any hazard involved;
- The life cycle stage of a facility;
- The programmatic mission of a facility;
- The particular characteristics of a facility;
- The relative importance of radiological and nonradiological hazards; and
- Any other relevant factor.

Title 10 CFR 830, Subpart B requires establishing each facilities hazard categorization consistent with DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*, Change Notice 1, (DOE 1997). Facility hazard categorization is one step in applying a graded approach for radiological hazards. The four main criteria to be considered for hazard categorization are: (1) the potential for criticality, (2) the inventory of radiological materials, (3) the segmentation of operations, and (4) the dispersibility of the radiological materials under accident conditions. DOE-STD-1027-92 sets forth the methodology for categorizing a DOE nuclear facility by evaluating the facility radiological materials inventory against the threshold quantities (TQ) for each hazard category level found in the Attachment A, Table A.1 of the STD. The hazard categorization must be based on an inventory of all radioactive materials within the facility.

Only facilities with a Hazard Category of 1, 2, or 3 are subject to the safety basis requirements of 10 CFR 830 Subpart B. The PORTS D&D project will have Hazard Category 2 and 3 facilities (Hazard Category 1 only applies to nuclear reactors). Additional categories are utilized at PORTS to extend a graded approach to safety to the remaining facilities. Facilities that do not meet or exceed the Hazard Category 3 threshold criteria but still possess some amount of radioactive material may be considered Radiological facilities. Radiological facilities are exempt from 10 CFR 830 Subpart B, but they are not exempt from other safety requirements such as the radiological protection requirements of 10 CFR 835, *Occupational Radiation Protection* (CFR 1998). Both USEC and DOE assign facilities a Radiological category when the radiological materials inventory is greater than the reportable quantities (RQ) in 40 CFR 302.4, *Designation, Reportable Quantities, and Notification* (CFR 2002), but is less than the TQ for Hazard Category 3. Table 1 includes the TQs (as found in DOE-STD-1027-92, Attachment A, Table A.1) and the RQs (as derived from 40 CFR 302.4) for selected isotopes.

Facilities or facility segments where there are combinations of radioactive materials are designated as Hazard Category 2 or 3 (or Radiological) if the sum of the ratios of the quantity of each material to the Hazard Category 2 or 3 (or Radiological) thresholds exceeds one [e.g., (inventory of isotope A/threshold of isotope A) + (inventory of isotope B/threshold of isotope B) + (inventory of isotope n/threshold of isotope n) >1].

The existing operations at the PORTS GDP are covered by existing safety basis documentation. Both USEC and DOE have categorized their respective PORTS GDP facilities for radiological hazards by evaluating the facility radiological materials inventory against the TQs found in DOE-STD-1027-92, Attachment A, Table A.1. Note: While the analysis and safety basis of occupational and non-radiological hazards are required to be documented in the Documented Safety Analysis (DSA) for Hazard Category 2 or 3 facilities, only radiological materials are considered in establishing the nuclear hazard category (per DOE-STD-1027-92).

Table 1. Specific activities, RQs, and TQs for selected isotopes

Isotope	Specific activity (Ci/g)[1]	Radiological RQ (g)[1]	Hazard Category 3 TQ (g)	Hazard Category 2 TQ (g)
^{234}U	6.239E-03	1.60E+01	6.70E+02	3.50E+04
^{235}U	2.163E-06	4.62E+04	1.90E+06	1.10E+08
^{238}U	3.364E-07	2.97E+05	1.30E+07	7.10E+08
^{99}Tc	1.688E-02	5.92E+02	1.00E+05	2.30E+08
^{237}Np	7.052E-04	1.42E+01	6.00E+02	8.30E+04
^{239}Pu	6.133E-02	1.63E-01	8.40E+00	9.00E+02

[1]Radiological RQs in 40 CFR 302.4 are reported in curies. The specific activities from LA-12846-MS (LANL 1994) are used to calculate the RQ in grams.

DOE contractors at PORTS utilize an Other Industrial (OI) category to distinguish between Standard Industrial (SI) facilities and facilities that may have unique hazards subject to the radiological protection program requirements of 10 CFR 835. These additional facility hazard categories have been established to ensure application of a consistent graded approach to safety.

PORTS facilities are assigned a facility hazard classification consistent with the requirements of 29 CFR 1910.119, *Process Safety Management of Highly Hazardous Materials*, (CFR 2004a); 40 CFR 68, *Chemical Accident Prevention Provisions* (CFR 2004b); and 40 CFR 302.. Initial hazard screening requirements apply to all PORTS facilities. Guidance for performing the initial inventory, hazard screening, and unmitigated hazard analysis (HA) is provided in BJC/OR-1112 (BJC 2005a). The facility hazard classification is based on the maximum hazardous material inventory, but may also involve the consequence analysis.

Existing categorization, classification, and hazard assessment documentation developed by USEC and DOE for the PORTS GDP facilities is valid for the majority of the facilities included in the PORTS D&D Project. The existing documentation is summarized below.

The USEC Safety Analysis Report (SAR) (USEC 1995) includes a summary listing of the facilities that were screened as part of the facility hazard categorization and the results of the hazards categorization. Table 1 of the Appendix of this report contains a listing that summarizes by facility the USEC categorization of leased facilities. Currently the USEC SAR has 20 leased facilities categorized as Hazard Category 2 facilities and 4 leased facilities categorized as Radiological facilities. The remainder of the USEC leased facilities included in the Table 1 of the Appendix of this report had a preliminary hazard screening (PHS) conducted and the radiological inventory is less than the radiological RQs required for a Radiological facility categorization. These facilities are designated as hazard category not applicable (N/A).

The existing DOE final categorization results for the PORTS non-leased DOE screened facilities are summarized in the Table 2 of the Appendix of this report. Currently, Table 2 (see the Appendix of this report) includes eight GDP facilities categorized as Hazard Category 2, nine radiological facilities, four closed Inactive Waste Sites (IWS), 48 OI, and the remaining facilities are designated as hazard category N/A (i.e., the facilities are SI).

It is assumed for the D&D project that no radiological or hazardous materials beyond those currently assumed in the categorization and classification documentation will be added to the existing inventory. Also, prior to start of the PORTS D&D project it is assumed that there will be reductions in the radiological and hazardous material inventories in many of the facilities. The inventory reductions will include, but are not limited to: USEC UF_6 product, feed, and tails cylinders from cylinder storage yards; feed and withdrawal facilities, distribution piping and process equipment; Freon; lube oil; polychlorinated biphenyls (PCBs) from transformers; and other radiological and chemical inventory as discussed in the CSDR.

The majority of the USEC and DOE safety basis documentation is valid for establishing bounding conditions for categorization, classification, and HA of the conceptual design of the PORTS D&D project. However, due to the reductions in radiological inventory the "initial" DOE hazard categorization for some USEC leased and DOE non-leased facilities will be lower than the existing hazard categorization of Hazard Category 2. Table 2 is a comparison of the nuclear facility hazard categorization for facilities that are included in the PORTS D&D project scope which have an existing hazard categorization of Hazard Category 2 to the hazard categorization of the same facilities at the start of D&D. The rationale for the difference between the existing categorization and the categorization at the start of the D&D project is also included.

Table 2. Summary of nuclear facility Hazard Category – current Hazard Category 2 facilities vs. Hazard Category at start of D&D

Facility Number	Facility Name	Hazard Category		Categorization Change Rationale
		Current	Start of D&D	
X-232C1	Tie Line X-342 to X-330	Category 2	Radiological	No in process UF_6
X-232C2	Tie Line X-330 to X-326	Category 2	Radiological	No in process UF_6
X-232C3	Tie Line X-330 to X-333	Category 2	Radiological	No in process UF_6
X-232C4	Tie Line X-326 to X-770	Category 2	Radiological	No in process UF_6
X-232C5	Tie Line X-343 to X-333	Category 2	Radiological	No in process UF_6
X-326	Process Building	Category 2	Category 2	
X-326 DMSAs	Process Building	Category 2	See X-326	Combined with X-326
X-326 L-Cage	Process Building	Category 2	See X-326	Combined with X-326
X-330	Process Building	Category 2	Category 2	
X-333	Process Building	Category 2	Category 2	Category 3, if criticality is demonstrated to be beyond extremely unlikely

Table 2. Summary of nuclear facility Hazard Category – current Hazard Category 2 facilities vs. Hazard Category at start of D&D (continued)

Facility Number	Facility Name	Hazard Category		Categorization Change Rationale
		Current	Start of D&D	
X-342A	Feed Vaporization Building	Category 2	Radiological	No in process UF_6, no containerized storage
X-343	Feed Vaporization & Sampling Building	Category 2	Radiological	No in process UF_6, no containerized storage
X-344A	UF_6 Sampling Facility	Category 2	Radiological	No in process UF_6, no containerized storage
X-345	SNM Storage Building	Category 2	Radiological	No containerized storage
X-700	Converter Shop & Cleaning Building	Category 2	Radiological	No in process UF_6, no containerized storage
X-705	Decontamination Building	Category 2	Category 2	
X-705E	Oxide Conversion "E" Area	Category 2	See X-705	Combined with X-705
X-710	Technical Service Building	Category 2	Radiological	No in process UF_6, no containerized storage
X-720	Maintenance and Stores Building	Category 2	Radiological	No in process UF_6, no containerized storage
X-744G	Bulk Storage Building (includes X-744Y)	Category 2	Radiological	No in process UF_6, no containerized storage
X-745B	Toll Enrichment Gas Yard	Category 2	N/A	No containerized storage
X-745C	West DUF_6 Storage Yard	Category 2	N/A	Not in D&D
X-745D	Cylinder Storage Yard	Category 2	N/A	No containerized storage
X-745E	NW DUF_6 Storage Yard	Category 2	N/A	Not in D&D
X-745F	N Process Gas Stockpile Yard	Category 2	N/A	No containerized storage
X-745G-1	Cylinder Storage Yard	Category 2	N/A	Not in D&D
X-745G-2	Cylinder Storage Yard	Category 2	N/A	No containerized storage
XT-847	Warehouse	Category 2	N/A	Not in D&D

Three of the these facilities are DUF_6 cylinder storage yards (X-745C, X-745E, and X-745G-1) that have been transitioned to UDS and are not included in the scope of the PORTS D&D project. One facility, the XT-847 Warehouse, will be retained by USEC for ACP and is not included in the D&D project scope. DOE currently has five non-leased GDP Hazard Category 2 facilities that are included in the D&D project scope: the X-326 DOE Material Storage Area (DMSA), X-326 L-Cage, X-345 Special Nuclear Material (SNM) Storage Building, X-744G Bulk Non-Uranium Enrichment Services Facility (including X-744Y and associated outdoor storage), and the X-705E Oxide Conversion "E" Area. Three of the DOE Hazard Category 2 facilities (the X-326 DMSAs, X-326 L-Cage, and X-705E) are non-leased areas contained within two USEC Hazard Category *2* facilities, the X-326 Process Building and the X-705 Decontamination Building. Prior to the start of D&D the X-326 and X-705 facilities will be deleased and returned to DOE. At the start of D&D the three existing Hazard Category 2 facilities for the X-326 will be categorized as a single facility and two Hazard Category 2 facilities for the X-705 will be categorized as a single facility. Reduction of the facilities radiological materials inventories accounts for the other difference shown in Table 2 between the existing hazard categorization and the categorization at the start of D&D.

The safety basis documentation for the PORTS D&D project draws extensively from a large volume of safety basis documentation that exists for the PORTS facilities and for D&D of nuclear facilities at other DOE sites that are similar to the PORTS facilities. The USEC SAR includes current descriptions of the leased PORTS facilities; PORTS leased facilities hazard categorizations; and includes an evaluation of known chemical and radiological hazards in the facilities. The Bechtel Jacobs Company LLC (BJC) *Documented Safety Analysis for the K-25 and K-27 Facilities at the East Tennessee Technology Park (ETTP), Oak Ridge, Tennessee*, DSA-ET-K-25/K-27-0001, Rev. 3 (BJC 2004a) (K25/K27 DSA) contains descriptions of facilities, processes and systems, hazard identification, HA, and accident analyses (AA) for D&D of Hazard Category 2 nuclear facilities with similar design and function as the Hazard Category 2 nuclear facilities that are included in the PORTS D&D Project.

The PORTS D&D project will include a new facility, the PORTS On-site Waste Disposal Facility (OSWDF). The DOE Oak Ridge Reservation has an Environmental Management Waste Management Facility (EMWMF) designed and permitted to accept D&D waste with radiological hazards and physical characteristics comparable to the wastes that will be disposed of in the OSWDF. The EMWMF was initially categorized as Hazard Category 2 based on the radiological materials inventory and the fact that sufficient fissile materials will be present for a potential criticality. The *Hazard Analysis Document for the Environmental Management Waste Management Facility*, HAD-YT-EMWMF-0020, Revision 3 (BJC 2005b) was prepared and the hazard categorization was modified as permitted after applying the criteria for segmentation of operations, and the dispersibility of the radiological materials under accident conditions. The final hazard categorization for the EMWMF is radiological with a hazard classification of Low. The OSWDF will receive equipment, piping, and building debris generated by the PORTS D&D project. Due to the similarity of PORTS D&D waste to be dispositioned in the PORTS OSWDF and the waste dispositioned in the EMWMF, the Hazard Analysis Document (HAD) for the EMWMF is treated as the Preliminary HAD (PHAD) for the D&D project. The basis for a final hazard categorization of Radiological for the EMWMF was reviewed and is applicable to the OSWDF; the hazard category for OSWDF is Radiological.

Each hazard category/classification requires a different degree of rigor to prepare the HA and implementation of the facility safety basis. A HA is prepared for all facilities that recieve an initial hazard categorization of Hazard Category 3 or higher. The HA provides a comprehensive assessment of hazards and/or accidents that could produce undesirable consequences to the worker, the public, and the environment. The HA includes hazard identification, screening for standard industrial hazards (SIHs), postulating release events, and risk binning of events based on frequency and consequence levels. The HA provides the core data from which potential follow-on activities, such as AA, control selection, and

emergency preparedness efforts are based. If the facility was categorized below Hazard Category 3, other less detailed forms of safety documentation are more appropriate [e.g., Safety Analysis Document (SAD), Health and Safety Plan (HASP), PHS, etc.], and a HA may not be required. Application of this graded approach to safety at PORTS ensures that the intent of DOE O 413.3A is met for the D&D project.

Table 3 summarizes PORTS D&D safety documentation requirements for the facility hazard categorization/classification and/or hazard assessment of facilities with a hazard categorization less than Hazard Category 3.

Table 3. Documentation requirements for facility hazard categorization/classification and hazard assessments

Chemical Classification	Categorization (less than Hazard Category 2)				
	SI	OI	Radiological (by Inventory)	Radiological (by Analysis)	Radiological (by IWS)
SI	Graded PHS	PHS	PHS	HAD	IWS
OI	PHS	PHS	PHS	HAD	IWS
Low	PHS	PHS	PHS	HAD	IWS
Moderate	SAD	SAD	SAD	HAD & SAD	IWS
High	SAD	SAD	SAD	HAD & SAD	IWS

* The preparation of a SAD may include incorporation of the attributes of a HASP or PHA as necessary.

These existing safety basis documents, as incorporated into the CSDR and this document, are representative of PORTS D&D bounding conditions, hazards, and event scenarios and the methodology applied to develop the safety basis is consistent with the analysis required by 10 CFR 830, Subpart B and as described in the DOE O 413.3A.

3. REFERENCES

BJC 2004a. *Documented Safety Analysis for the K-25 and K-27 Facilities at the East Tennessee Technology Park, Oak Ridge, Tennessee*, DSA-ET-K-25/K-27-0001, Rev. 3.

BJC 2004b. *Hazard Analysis for the K-25 and K-27 Process Buildings and Staging Areas at the East Tennessee Technology Park*, BJC-OR-1153, Rev.3.

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BJC 2005b. *Hazard Analysis Document for the Environmental Management Waste Management Facility*, HAD-YT-EMWMF-0020, Revision 3.

CFR 1998. 10 CFR 835, *Occupational Radiation Protection*, (as amended November 1998).

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CFR 2002. 40 CFR 302 *Designation, Reportable Quantities, and Notification.*

CFR 2004a. 29 CFR 1910.119, *Process Safety Management of Highly Hazardous Materials.*

CFR 2004b. 40 CFR 68, *Chemical Accident Prevention Provisions.*

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APPENDIX

FACILITY HAZARD CATEGORIZATION

Table 1. Facilities categorization results for leased facilities (USEC categorization)

Facility number	Facility name	Nuclear hazard category
X-100	Administration Bldg	N/A
X-100B	Air Cond. Equip. Bldg	N/A
X-101	Dispensary	N/A
X-102	Cafeteria	N/A
X-103	Aux. Office Bldg	Radiological
X-104	Guard Headquarters	N/A
X-104A	Indoor Firing Range Bldg	N/A
X-106	Tactical Response Building	N/A
X-108A	South Portal & Shelter - Drive Gate	N/A
X-108B	N Portal and Shelter	N/A
X-108E	Constr Entrance Portal	N/A
X-108H	Pike Ave Portal	N/A
X-109A	Personnel Monitoring Bldg	N/A
X-109B	Personnel Monitoring Bldg	N/A
X-109C	Personnel Monitoring Station	N/A
X-111A	SNM Monitoring Portal	N/A
X-111B	SNM Portal N. W.	N/A
X-112	Data Processing	N/A
X-114A	Outdoor Firing Range	N/A
X-120H	Weather Station	N/A
X-200	Site Preparation, Grading, and Landscaping	N/A
X-201	Land and Land Rights	N/A
X-202	Roads	N/A
X-204-1	Railroad and Railroad Overpass	N/A
X-204-2	Railroad and Railroad Overpass	N/A
X-206A	North Main Parking Lot	N/A
X-206B	South Main Parking Lot	N/A
X-206E	Construction Parking Lot	N/A
X-206H	Pike Ave Parking Lot	N/A
X-206J	South Office Parking Lot	N/A
X-208	Security Fence	N/A
X-210	Sidewalks	N/A
X-215A	Electrical Distribution to Process Buildings	N/A
X-215B	Electrical Distribution to Other Areas	N/A
X-215C	Exterior Lighting	N/A
X-215D	Electrical Power Tunnels	N/A
X-220A	Instrumentation Tunnels	N/A
X-220B1	Process Instrumentation Lines	N/A
X-220B2	Carrier Communication Systems	N/A
X-220B3	Water Supply Telemetering Lines	N/A
X-220C	Superior American Alarm System	N/A
X-220D1	General Telephone System	N/A
X-220D2	Process Telephone System	N/A
X-220D3	Emergency Telephone System	N/A
X-220E1	Evacuation PA System	N/A
X-220E2	Process PA System	N/A
X-220E3	Power Public Address System	N/A
X-220F	Plant Radio System	N/A
X-220G	Pneumatic Dispatch System	N/A

Table 1. Facilities categorization results for leased facilities (USEC categorization) (continued)

Facility number	Facility name	Nuclear hazard category
X-220H	McCalloh Alarm System	N/A
X-220J	Radiation Alarm System	N/A
X-220K	Cascade Automatic Data Processing System	N/A
X-220L	Classified Computer System	N/A
X-220N	Security Alarm and Surveillance System	N/A
X-220P	MSR System	N/A
X-220R	Public Warning Siren System	N/A
X-220S	Power Operations SCADA System	N/A
X-230	Water Supply Line	N/A
X-230A	Sanitary and Fire Water Distribution System	N/A
X-230B	Sanitary Sewers	N/A
X-230C	Storm Sewers	N/A
X-230D	Softened Water Distribution System	N/A
X-230E	Plant Water System (make-up)	N/A
X-230F	Raw Water Supply Line	N/A
X-230G	Recirculating Cooling Water System	N/A
X-230H	Fire Water Distribution System	N/A
X-230J2	S. Environmental Sample Bldg	N/A
X-230J3	West Environmental Sampling Building and Intermittent Containment Basin	N/A
X-230J5	West Holding Pond and Oil Separation Station	N/A
X-230J6	Northeast Holding Pond, Monitoring Facility, and Secondary Oil Collection Basin	N/A
X-230J7	East Monitor Facility (East Holding Pond and Oil Separation)	N/A
X-230J9	North Environmental Sample Bldg	N/A
X-230K	South Holding Pond	N/A
X-230L	North Holding Pond and Unnamed Construction Fill Area	N/A
X-232A	Nitrogen Distribution System	N/A
X-232B	Dry Air Distribution System	N/A
X-232C1	Tie Line X-342 to X-330	Category 2
X-232C2	Tie Line X-330 to X-326	Category 2
X-232C3	Tie Line X-330 to X-333	Category 2
X-232C4	Tie Line X-326 to X-770	Category 2
X-232C5	Tie Line X-343 to X-333	Category 2
X-232D	Steam and Condensate System	N/A
X-232E	Freon Distribution System	N/A
X-232F	Fluorine Distribution System	N/A
X-232G	Support for Distribution Lines	N/A
X-240A	RCW System (Cathodic Protection System)	N/A
X-300	Plant Control Facility	N/A
X-300A	Process Monitoring Bldg	N/A
X-300B	Plant Control Facility Carport	N/A
X-300C	Emergency Communications Antenna	N/A
X-326	Process Bldg	Category 2
X-330	Process Bldg	Category 2
X-333	Process Bldg	Category 2
X-342A	Feed Vaporization Bldg	Category 2
X-342B	Fluorine Storage Bldg	Radiological
X-343	Feed Vaporization & Sampling Bldg	Category 2
X-344A	UF_6 Sampling Facility	Category 2

Table 1. Facilities categorization results for leased facilities (USEC categorization) (continued)

Facility number	Facility name	Nuclear hazard category
X-344B	Maintenance Storage Bldg	N/A
X-501	Substation	N/A
X-501A	Substation	N/A
X-502	Substation	N/A
X-515	330 KV Tie Line Between X-530 and X-533	N/A
X-530A	Switchyard	N/A
X-530B	Switch House	N/A
X-530C	Test And Repair Bldg	N/A
X-530D	Oil House	N/A
X-530E	Valve House	N/A
X-530F	Valve House	N/A
X-533A	Switchyard	N/A
X-533B	Switch House	N/A
X-533C	Test And Repair Bldg	N/A
X-533D	Oil House	N/A
X-533E	Valve House	N/A
X-533F	Valve House	N/A
X-533H	Gas Reclaiming Cart Garage	N/A
X-540	Telephone Bldg	N/A
X-600	Steam Plant	N/A
X-600A	Coal Yard	N/A
X-600B	Steam Plant Shop Bldg	N/A
X-600C	Ash Wash Treatment Bldg.	N/A
X-605	Sanitary Water Control House	N/A
X-605A	Well Field	N/A
X-605H	Booster Pump House	N/A
X-605I	Chlorinator Bldg	N/A
X-605J	Diesel Generator Bldg	N/A
X-608	Raw Water Pump House	N/A
X-608A	Well Field	N/A
X-608B	Well Field	N/A
X-611	Water Treatment Plant	N/A
X-611B	Lagoon	N/A
X-611C	Filter Bldg	N/A
X-611D	Recarbonization Instrument Bldg	N/A
X-611E	Clear Well & Chlorine Building	N/A
X-612	Elevated Storage Tank	N/A
X-614A	Sewage Pumping Station	N/A
X-614B	Sewage Pumping Station	N/A
X-614D	Sewage Pumping Station	N/A
X-614P	Sewage Pumping Station	N/A
X-617	South Holding Pond pH Control Facility	N/A
X-618	North Holding Pond Storage Bldg	N/A
X-621	Coal Pile Treatment Fac	N/A
X-626-1	Recirculating Water Pump House	N/A
X-626-2	Cooling Tower	N/A
X-630-1	Recirculating Water Pump House	N/A
X-630-2A	Cooling Tower	N/A
X-630-2B	Cooling Tower	N/A
X-633-1	Recirulating. Water Pump House	N/A
X-633-2A	Cooling Tower	N/A
X-633-2B	Cooling Tower	N/A

Table 1. Facilities categorization results for leased facilities (USEC categorization) (continued)

Facility number	Facility name	Nuclear hazard category
X-633-2C	Cooling Tower	N/A
X-633-2D	Cooling Tower	N/A
X-640-1	Pump House	N/A
X-640-2	Elevated Storage Tank	N/A
X-700	Converter Shop & Cleaning Bldg	Category 2
X-700A	Air Condtioning Equipment Bldg	N/A
X-705	Decontamination Bldg	Category 2
X-705D	Heat Booster Pump Bldg	N/A
X-710	Technical Service Bldg	Category 2
X-710A	Technical Service Gas Manifold Shed	N/A
X-710B	Explosion Test Facility	N/A
X-720	Maintenance and Stores Bldg	Category 2
X-720B	Radio Base Station	N/A
X-720C	Paint & Storage Bldg	N/A
X-741	Oil Drum Storage Facility	N/A
X-742	Gas Cylinder Storage Facility	N/A
X-743	Lumber Storage Facility	N/A
X-744B	Salt Storage Building	N/A
X-744H	Bulk Storage Bldg	N/A
X-744J	Bulk Storage Bldg	N/A
X-744L	Stores and Maintenance Warehouse	N/A
X-744W	Surplus & Salvage Warehouse	N/A
X-745B	Toll Enrichment Gas Yard	Category 2
X-745D	Cylinder Storage Yard	Category 2
X-745F	N Process Gas Stockpile Yard	Category 2
X-745G-2	Cylinder Storage Yard	Category 2
X-746	Material Receiving and Inspection	N/A
X-747A	Material Storage Yard	N/A
X-747B	Material Storage Yard	N/A
X-747C	Material Storage Yard	Radiological
X-747D	Material Storage Yard	Radiological
X-747E	Material Storage Yard	N/A
X-747J	Decontamination Storage Yard	N/A
X-748	Truck Scale	N/A
X-750	Mobile Equip Maint. Shop	N/A
X-750A	Garage Storage Bldg	N/A
X-760	Chemical Engineering Bldg	N/A
X-1007	Fire Station	N/A
X-1020	Emergency Operations Ctr	N/A
X-1107A	Administrative Portal	N/A
X-1107AV	Administrative Vehicle Portal	N/A
X-1107BP	Administrative Pedestrian Portal	N/A
X-1107DP	Northeast Pedestrian Portal	N/A
X-1107DV	Northeast Vehicle Portal	N/A
X-2202	GCEP Roads	N/A
X-2204	GCEP Railroads	N/A
X-2207A	Parking Lot	N/A
X-2207D	Parking Lot	N/A
X-2208	GCEP Security Fence	N/A
X-2215A	GCEP Underground Electrical Distribution System to Process Buildings	N/A
X-2215B	GCEP Underground Electrical Distribution System to Other Buildings	N/A
X-2215C	GCEP Exterior Lighting	N/A

Table 1. Facilities categorization results for leased facilities (USEC categorization) (continued)

Facility number	Facility name	Nuclear hazard category
X-2220C	GCEP Fire and Supervisory Alarm System	N/A
X-2220D	GCEP Telephone System	N/A
X-2220L	GCEP Classified Computer System	N/A
X-2220N	GCEP Security Access Control and Alarm System	N/A
X-2230A	GCEP Sanitary Water Distribution System	N/A
X-2230B	GCEP Sanitary Sewer Collection System	N/A
X-2230C	GCEP Storm Sewer System	N/A
X-2230F	GCEP Raw Water Supply Line	N/A
X-2230G	GCEP Recirculating Water System	N/A
X-2230H	GCEP Fire Water Distribution System	N/A
X-2230J	Liquid Effluent System	N/A
X-2232B	GCEP Dry Air Distribution System	N/A
X-2232D	GCEP Steam and Condensate System	N/A
X-2232G	GCEP Support for Distribution Lines	N/A
X-5000	Switch House	N/A
X-5001	Substation	N/A
X-5001A	Valve House	N/A
X-5001B	Oil Pumping Station	N/A
X-5015	High Voltage Electrical System	N/A
X-6609	GCEP Well Field	N/A
X-6613	Sanitary Water Storage Tank	N/A
X-6614E	Sewage Lift Station	N/A
X-6614G	Sewage Lift Station	N/A
X-6614H	Sewage Lift Station	N/A
X-6614J	Sewage Lift Station	N/A
X-6619	Sewage Treatment Facility	N/A
X-6643-1	Fire Water Storage Tank #1	N/A
X-6643-2	Fire Water Storage Tank #2	N/A
X-6644	Fire Water Pumphouse	N/A
X-7721	Maintenance, Stores and Training Bldg	N/A
XT-801	South Office Building	N/A
XT-847	Warehouse	Category 2

Table 2. Facilities categorization results for non-leased facilities (DOE categorization)

Facility number	Facility name	Nuclear hazard category
X-100L	Environmental Control Trailer	N/A
X-105	Electronic Maintenance Bldg	Radiological
X-106B	Old Fire Training Building	N/A
X-208B	SNM Security Fence	OI
X-230A3	Ambient Air Monitoring Station	N/A
X-230A6	Ambient Air Monitoring Station	N/A
X-230A8	Ambient Air Monitoring Station	N/A
X-230A9	Ambient Air Monitoring Station	N/A
X-230A10	Ambient Air Monitoring Station	N/A
X-230A12	Ambient Air Monitoring Station	N/A
X-230A15	Ambient Air Monitoring Station	N/A
X-230A23	Ambient Air Monitoring Station	N/A
X-230A24	Ambient Air Monitoring Station	N/A
X-230A28	Ambient Air Monitoring Station	N/A
X-230A29	Ambient Air Monitoring Station	N/A
X-230A36	Ambient Air Monitoring Station	N/A
X-230A37	Ambient Air Monitoring Station	N/A
X-230A40	Ambient Air Monitoring Station	N/A
X-230A41	Ambient Air Monitoring Station	OI
X-230J1	East Environmental Sampling Building	N/A
X-230J8	Environmental Storage Bldg	N/A
X-230M	Clean Test Site	OI
X-231A	Southeast Oil Biodegredation Plot	Closed IWS
X-231B	Southwest Oil Biodegradation Plot	Closed IWS
X-235	South Groundwater Collection System	OI
X-237	Little Beaver Groundwater Collection System	OI
X-326 DMSAs	Process Bldg	Category 2
X-326 L-Cage	Process Bldg	Category 2
X-334	Transformer Cleaning & Storage	N/A
X-342C	Waste HF Neutralization Pit	OI
X-344C	HF Storage Bldg	OI
X-344D	HF Neutralization Pit	OI
X-344E	Gas Ventilation Stack	OI
X-344F	Safety Bldg	OI
X-344G	Russian Transparency Trailer	OI
X-345	SNM Storage Bldg	Category 2
X-611A	Old Lime Sludge Lagoons	OI
X-615	Old Sewage Treatment Plant	Radiological
X-616	Liquid Effluent Control Facility	OI
X-616 Cap	Cap Over Sludge Lagoons	OI
X-622	South Groundwater Treatment Facility	OI
X-623	North Groundwater Treatment Building	OI
X-624	Little Beaver Groundwater Treatment Facility	OI
X-624-1	Little Beaver Grundwtr Trtmnt Decon Bldg	OI
X-625	Groundwater Passive Treatment Facility	OI
X-627	Groundwater Pump and Treat	OI
X-701B	Holding Pond	OI
X-701D	Water De-Ionization Facility	OI
X-701E	Neutralization Bldg	OI

Table 2. Facilities categorization results for non-leased facilities (DOE categorization) (continued)

Facility number	Facility name	Nuclear hazard category
X-705B	Contaminated Burnable Storage Area	Radiological
X-705E	Oxide Conversion "E" Area	Category 2
X-720A	Maintenance & Stores Gas Manifold Shed	OI
X-734	Old Sanitary Landfill	OI
X-734A	Construction Spoils Disposal Area	OI
X-734B	Construction Spoils Disposal Area	OI
X-735	Sanitary Landfill	OI
X-735A	Landfill Utility Bldg	OI
X-735B	Borrow Area	OI
X-736	West Construction Spoils Landfill	OI
X-740	Waste Oil Storage Facility	OI
X-744G	Bulk Storage Building	Category 2
X-744K	Warehouse K	OI
X-744N	Warehouse N Non-UEA	OI
X-744P	Warehouse P Non-UEA	OI
X-744Q	Warehouse Q Non-UEA	OI
X-744S	Warehouse S Non-UEA	OI
X-744T	Warehouse T Non-UEA	OI
X-744U	Warehouse U Non-UEA	OI
X-744Y	Waste Storage Area	Category 2
X-745C	West DUF_6 Storage Yard	Category 2
X-745E	Northwest DUF_6 Storage Yard	Category 2
X-747F	Miscellaneous Material Storage Yard	OI
X-747G-1	Precious Metal Scrap Yard	Radiological
X-747H	Northwest Contaminated Scrap Yard	Radiological
X-749	South Contaminated Material Storage Yard	Closed IWS
X-749A	South Classified Burial Yard	OI
X-749B	Peter Kiewit Landfill	Closed IWS
X-751	GCEP Mobile Equipment Garage	OI
X-752	Warehouse	Radiological
X-770	Mechanical Testing Bldg	Radiological
X-1107BV	Interplant Vehicle Portal	OI
X-1107EP	E-Pedestrian Portal	OI
X-1107EV	E-Vehicle Portal	OI
X-1107FP	F-Pedestrian Portal	OI
X-1107FV	F-Vehicle Portal	OI
X-2200	GCEP Site Preparation, Granding, and Landscaping	OI
X-2207E	Northwest Parking Lot	OI
X-2207F	South Parking Lot	OI
X-2210	GCEP Sidewalks	OI
X-2230M	Holding Pond #1 (Southwest Holding Pond)	OI
X-2230N	Holding Pond #2 (West Holding Pond)	OI
X-2232E	Natural Gas Line	OI
X-3000	Environmental Compliance Building	OI
X-3002	GCEP Process Building #2	Radiological
X-3012	GCEP Process Support Building	OI
X-3346	GCEP Feed and Withdrawal Facility	Radiological
X-6002	Boiler System	Radiological
X-6002A	Oil Storage Facility	OI
X-7725	GCEP Recycle and Assembly Building	Category 2
X-7725A	Waste Accountability Facility	Radiological
X-7725B	Environmental Information Center	OI

Table 2. Facilities categorization results for non-leased facilities (DOE categorization) (continued)

Facility number	Facility name	Nuclear hazard category
X-7726	Centrifuge Training and Test Facility	Category 2
X-7745R	Recycle/Assembly Storage Yard	Category 2
XT-860A	RUBB Building at X-7725	Category 2
XT-860B	RUBB Building at X-3346	Radiological
N/A	DOE Contractor Area	OI
N/A	Contractor Laydown Area	OI

N/A – Not applicable (the facility radiological and non-radiological inventory screens less than TQs and RQs of 40 CFR 302.4.
OI – Other Industrial
IWS – Inactive waste site

TPMC
Theta Pro2Serve Management Company, LLC

DOE Contract No. DE-AC24-05OH20193
OP-06-095
September 25, 2006

Mr. Cid Voth, General Engineer (D&D)
Portsmouth/Paducah Project Office
U.S. Department of Energy
P. O. Box 700
Piketon, Ohio 45661

U.S. Department of Energy (DOE) Contract No. DE-AC24-05OH20193: Preliminary Hazard Analysis Report for the Decontamination and Decommissioning (D&D) Project at the Portsmouth Gaseous Diffusion Plant (PORTS)

Dear Mr. Voth:

Please find enclosed the Preliminary Hazard Analysis Report for the D&D Project at PORTS (TPMC/PORTS-96).

If you have any questions or wish to discuss the status of this action item further, please contact me at (740) 897-3762.

Sincerely,

Roger D. McDermott
VP Operations
Theta Pro2Serve Management Company, LLC

RDM:am

Enclosure

c w/enclosure: Jud Lilly, DOE/PPPO
Mark Scott, TPMC
File – Operations
File – Pre-D&D Planning
File – RMDC

c w/o enclosure: David Kozlowski, DOE/PPPO
Clarence Sheward, TPMC

bc: Lottie Christian, Theta
Cathy Forshey, TPMC
Tom Houk, TPMC
John McGee, RSI